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DAVID FOX
CANTOR COLBURN LLP
55 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

EXAMINER

LIN, KENNY S

ART UNIT	PAPER NUMBER
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2154

DATE MAILED: 04/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 09/650,254		Applicant(s) CHIN, HON WAH	
	Examiner Kenny Lin		Art Unit 2154	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7 and 9-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7 and 9-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. Claims 1-5, 7 and 9-21 are presented for examination. Claims 6 and 8 are canceled.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 5, 10-11 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Judd et al (Judd), US 5,465,251.

4. Judd was cited in the previous office action.

5. As per claim 5, Judd taught the invention as claimed including an address protocol for forwarding a message packet from a source node to a destination node along a sequence of communicatively coupled nodes functioning as a linear chain network (col.2, lines 26-31, col.5, lines 55-59; strings), the address protocol comprising:

- a. An identifier field containing an identifier to identify the message packet as having a relative address protocol (col.6, lines 14-15);
- b. A relative source address field programmed with an initial value at the source node corresponding to a destination node that is a preselected number of nodes

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away from the source node along the linear chain network (col.2, lines 3-18, 32-41, col.6, lines 33-35, col.7, lines 64-67, col.8, lines 43-50); and

- c. a counter that is adjusted by a preselected step in value at each node the message packet is forwarded to along the chain network until the counter reaches the initial value, thereby indicating that the destination node has been reached (col.2, lines 3-18, 32-41, col.8, lines 44-61),
- d. Wherein the destination node does not require address information in addition to the counter reaching the initial value to accept the message packet (col.2, lines 36-39).

6. As per claim 10, Judd taught the invention as claimed in claim 5. Judd further taught that the initial value is a linear function of the desired number of node hops (col.7, lines 64-67).

7. As per claim 11, Judd taught the invention as claimed in claim 5. Judd further taught that wherein at least one node in the linear chain is a regenerator element (col.2, lines 31-39, col.8, 43-50).

8. As per claim 13, Judd taught the invention as claimed in claim 5. Judd further taught that the chain network comprises a portion of a ring network (col.2, lines 26-31, col.5, lines 61-67, col.6, lines 1; loop).

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9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-4, 7, 9, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Judd et al (Judd), US 5,465,251, in view of Saleh et al (Saleh), US 6,801,496.

11. As per claim 1, Judd taught the invention as claimed including an address protocol for forwarding a message packet from a source node to a destination node along a sequence of communicatively coupled nodes functioning as a linear chain network (col.2, lines 26-31, col.5, lines 55-59; strings), the address protocol comprising:

- a. A relative source address field programmed with an initial value (0h) at the source node corresponding to a destination node that is a preselected number of nodes away from the source node along the linear chain network (col.2, lines 3-18, 32-41, col.6, lines 33-35, col.7, lines 64-67, col.8, lines 43-50); and
- b. a counter that is decremented by a preselected step in value at each node the message packet is forwarded to along the chain network until the counter reaches the initial value, thereby indicating that the destination node has been reached (col.2, lines 3-18, 32-41, col.7, lines 55-63, col.8, lines 44-61; if Hi_digit = 0h; accept the frame),

- c. Wherein the destination node does not require address information in addition to the counter reaching the initial value to accept the message packet (col.2, lines 36-39).

12. Judd did not specifically teach that the counter is incremented in value. However, since Judd taught that the counter is programmed with the initial value and the counter is **modified** at each node (col.2, lines 3-18, 31-41), it would have been obvious to increment the counter as a method of modifying the counter. Saleh taught to increment counters at each node (col.8, lines 44-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd and Saleh because Saleh's teaching of setting the counter with a zero initial value and incrementing it at each node enables Judd's method to reach the same result by incrementing counter till it is equal to non-zero initial value instead of counting down to zero.

13. As per claim 14, Judd taught the invention as claimed including a method of sending a message packet along a portion of a network functioning as a linear chain network from a source node to a destination node using an address protocol having an identifier to identify the message packet as having a relative address protocol (col.2, lines 26-31, col.5, lines 55-59, col.6, lines 14-15), a relative source address field for storing an initial value, and a counter (col.2, lines 3-18, 32-41, col.7, lines 64-67), the method comprising the steps of:

- a. Selecting the initial value to be a function of a desired number of node hops along the linear chain network from the source node (col.2, lines 3-18, 32-41, col.7, lines 64-67);
- b. Programming the relative source address field to have the initial value (col.2, lines 3-18, 32-41, col.7, lines 64-67);
- c. Adjusting the counter by a preselected step in value at each node that the message packet is forwarded to (col.2, lines 3-18, 32-41, col.8, lines 44-61); and
- d. Accepting the message packet at a destination node when the counter value reaches the initial value, without requiring address information in addition to the counter reaching the initial value to accept the message packet (col.2, lines 3-18, 32-41, col.8, lines 44-61),
- e. Wherein the preselected step in value is chosen so that the counter reaches the initial value when the packet has completed the desired number of node hops (col.2, lines 3-18, 32-41, col.8, lines 44-61).

14. Judd did not specifically teach that adjusting the counter is to increment it. However, since Judd taught that the counter is programmed with the initial value and the counter is **modified** at each node (col.2, lines 3-18, 31-41), it would have been obvious to increment the counter as a method of modifying the counter. Saleh taught to increment counters at each node (col.8, lines 44-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd and Saleh because Saleh's teaching of setting the counter with a zero initial value and incrementing it at each node enables Judd's

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method to reach the same result by incrementing counter till it is equal to non-zero initial value instead of counting down to zero.

15. As per claim 18, Judd taught the invention as claimed including a method of sending a message packet along a chain network having regenerator nodes from a source node to a destination node using an address protocol having an identifier to identify the message packet as having a relative address protocol (col.2, lines 26-31, col.5, lines 55-59, col.6, lines 14-15), a relative source address for storing an initial value, and a counter (col.2, lines 3-18, 32-41, col.7, lines 64-67), the method comprising the steps of:

- a. Selecting the initial value to be a function of a desired number of node hops along the linear chain from the source node (col.2, lines 3-18, 32-41, col.7, lines 64-67);
- b. Adjusting the counter by a preselected step in value at each node that the message packet is forwarded to (col.2, lines 3-18, 32-41, col.8, lines 44-61); and
- c. Accepting the message packet at a destination node when the counter value reaches the initial value, without requiring address information in addition to the counter reaching the trigger value to accept the message packet (col.2, lines 3-18, 32-41, col.8, lines 44-61),
- d. Wherein the preselected step in value is chosen so that the counter reaches the initial value when the packet has completed the desired number of node hops (col.2, lines 3-18, 32-41, col.8, lines 44-61).

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16. Judd did not specifically teach that adjusting the counter is to increment it. However, since Judd taught that the counter is programmed with the initial value and the counter is **modified** at each node (col.2, lines 3-18, 31-41), it would have been obvious to increment the counter as a method of modifying the counter. Saleh taught to increment counters at each node (col.8, lines 44-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd and Saleh because Saleh's teaching of setting the counter with a zero initial value and incrementing it at each node enables Judd's method to reach the same result by incrementing counter till it is equal to non-zero initial value instead of counting down to zero.

17. As per claim 2, Judd and Saleh taught the invention substantially as claimed in claim 1. Judd further taught an identifier field containing an identifier to identify the message packet as having a relative address protocol (col.6, lines 14-15)

18. As per claims 3 and 4, Judd and Saleh taught the invention substantially as claimed in claims 1 and 2. Judd further taught a relative source destination field containing the initial value (col.6, lines 33-35, col.8, lines 43-50).

19. As per claim 7, Judd taught the invention as claimed in claim 5. Judd further taught that the initial value is an integer having an absolute value equal to the desired number of node hops and the counter is changed by a step in value of one at each node (col.7, lines 64-67). Judd did not specifically teach that the change of the counter is an increment in value. However, since

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Judd taught that the counter is programmed with the initial value and the counter is **modified** at each node (col.2, lines 3-18, 31-41), it would have been obvious to increment the counter as a method of modifying the counter. Saleh taught to increment counters at each node (col.8, lines 44-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd and Saleh because Saleh's teaching of setting the counter with a zero initial value and incrementing it at each node enables Judd's method to reach the same result by incrementing counter till it is equal to non-zero initial value instead of counting down to zero.

20. As per claim 9, Judd taught the invention substantially as claimed in claim 7. Judd did not specifically teach that the counter has an initial value of zero and the counter is counted up by one at each node hop until the initial value is reached. However, since Judd taught that the counter is programmed with the initial value and the counter is **modified** at each node (col.2, lines 3-18, 31-41), it would have been obvious to increment the counter as a method of modifying the counter. Saleh taught to increment counters at each node (col.8, lines 44-48). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Judd and Saleh because Saleh's teaching of setting the counter with a zero initial value and incrementing it at each node enables Judd's method to reach the same result by incrementing counter till it is equal to non-zero initial value instead of counting down to zero.

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21. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Judd et al (Judd), US 5,465,251, in view of "Official Notice".

22. As per claim 12, Judd taught the invention substantially as claimed in claim 5. Judd did not specifically teach that the chain network is a virtual chain network. Official Notice is taken that the limitations narrowed by this claim is considered obvious and furthermore a matter of design choice, since applicants have not disclosed that the claimed limitations solve any stated problem or are of any particular purpose and it appears that the invention would perform equally well without these claimed features. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to efficiently utilize the claimed method in all "types of presenting chain network". Official Notice is taken that it would have been obvious to implement Judd's teaching to all applicable network environments. It would have been obvious to one of ordinary skill in the art at the time the invention was made to expand Judd's teaching of using hop counters to transmit packets in suitable networks such as virtual network, ring network or other applicable network.

23. Claims 15-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Judd and Saleh as applied to claims 14 and 18 above, and further in view of "Official Notice".

24. As per claims 15 and 19, Judd and Saleh taught the invention substantially as claimed in claims 14 and 18. Judd further taught the message packet to comprise a status query message and further request the destination node to send a status message packet back to the source node

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(col.11, lines 15-19). Judd and Saleh did not specifically teach the message packet is sent back along the chain having a relative source address field and a counter. However, since Judd taught to use identification field and counter in the message packet, program initial values in hop counter, adjusting the counter by the preselected step in value at each node that the message packet is forwarded to, and accepting the message packet when the counter reaches the initial value (col.2, lines 3-18, 32-41, col.7, lines 64-67, col.8, lines 44-61) and Saleh taught to adjust the counting by increment the counter, it would be obvious to implement such teachings in the status message packet as well (destination node becomes initiator). Official Notice is taken that it would have been obvious to implement the same teaching of using counter and initial value for returning messages in Judd and Saleh's system (sending package to reverse direction). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include Judd and Saleh's teachings of using identification field, counter, counter adjusting and packet accepting in not only the message packet sent from the source node, but also the status message packet sent from the destination node back to the source node as well.

25. As per claim 16, Judd and Saleh taught the invention substantially as claimed in claim 15. Judd further taught that wherein at least one node in the linear chain is a regenerator element (col.2, lines 31-39, col.8, 43-50).

26. As per claim 17, Judd and Saleh taught the invention substantially as claimed in claim 15. Judd further taught to:

- a. selecting a return message (col.11, lines 15-19);

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- b. transmitting the return message in the direction to the source node (col.1, lines 15-19);
- c. incrementing the second counter by the preselected step in value at each node that the message packet is forwarded to (col.2, lines 3-18, 32-41, col.8, lines 44-61);
and
- d. accepting the return message packet at the source node when the second counter reaches the initial value (col.2, lines 3-18, 32-41, col.7, lines 64-67, col.8, lines 44-61).

27. As per claim 20, Judd and Saleh taught the invention substantially as claimed in claim 19. Judd and Saleh did not specifically teach to send a plurality of the status query messages to a plurality of destination nodes, the destination nodes corresponding to different initial values indicating that the destination nodes are each a different number of node hops from the source node and to receive the status message packets from responding destination nodes; and determining the relative distance of responding nodes as a function of the initial value corresponding to each responding node, wherein a fault is isolated to a part of the network subsequent to the responding active node the greatest number of node hops from the source node. However, it would have been obvious to send a plurality of status query message to a plurality of destination nodes and to have the destination nodes to send status message back since Judd taught to send query message to a destination node (col.2, lines 6-9, col.11, lines 15-19) and to send acknowledgement message back to the source node (col.1, lines 15-19). Furthermore, it would have been obvious to use the initial value corresponding to nodes that are each a different

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number of node hops from the source node to determine the relative distance of them where network fault can be isolated subsequent to the farthest node away from the source node.

Official Notice is taken that it would have been obvious to send a plurality of status query message to a plurality of destination nodes. It would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the source node in Judd and Saleh's method to send multiple status query message to multiple destination nodes to obtain status message and determine relative distance of the nodes.

28. As per claim 21, Judd and Saleh taught the invention substantially as claimed in claim 14.

Judd further taught the method to comprise the steps of:

- a. Sending a first status query message packet requesting a return status message from a destination node at least one node hope from the source node (col.11, lines 15-19);
- b. Sending at least one subsequent status query message packet requesting a return status message from another destination node corresponding to a different number of node hops from the source node and recording whether the return status message is received at the source node; (col.11, lines 15-19; with different destination).

29. Judd and Saleh did not specifically teach to detect a fault in a linear chain of regenerator nodes using the relative address protocol; and determine the node the greatest number of node hops from the source node replying to the status query message directed to it, wherein a fault is

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isolated to a portion of the chain network subsequent to the node the greatest number of node hops from the source node returning the corresponding status message. However, it would have been obvious to use the initial value corresponding to nodes that are each a different number of node hops from the source node to determine the node the greatest number of node hops from the source node where network fault can be isolated subsequent to it. Official Notice is taken that it is obvious that a fault may be detected when subsequent portion of the network of the node the greatest number of node hops from the source node is reached. It would have been obvious to one of ordinary skill in the art at the time the invention was made to enable the source node in Judd and Saleh's method to send multiple status query message to multiple destination nodes to obtain status message and determine relative distance of the nodes and to detect faults when exceeds greatest number of node hops from the source node.

Response to Arguments

30. Applicant's arguments with respect to claims 1-21 have been considered but are not persuasive and are moot in view of the new ground(s) of rejection.

31. In the remark, applicant argued (1) Examiner's reliance on Official Notice are improper since examiner is merely using official notice to avoid providing any motivation to make the proposed modification to Judd reference (see page 17-18 of the remark).

32. Examiner traverse the argument that:

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33. As to point (1), motivations to combine Judd's reference with knowledge generally known to one of ordinary skill in the art can be found in Judd reference itself. Regarding claim 9, Judd provided motivation to modify counter values (col.2, lines 3-18). It would have been obvious to use various mathematical methods to modify the counter values including incrementing the counter values. Regarding claim 15 and 19, Judd taught to use identification field and counter in the message packet, program initial values in hop counter, adjust the counter by the preselected step in value at each node that the message packet is forwarded to, and accepting the message packet when the counter reaches the initial value (col.2, lines 3-18, 32-41, col.7, lines 64-67, col.8, lines 44-61), it would be obvious to implement such teachings in the status message packet as well (destination node becomes initiator; reverse the direction of transmission). Official Notice is taken that it would have been obvious to implement the same teaching of using counter and initial value for returning messages in Judd's system (sending package to reverse direction). Regarding claim 20, Judd taught to send query message to a destination node (col.2, lines 6-9, col.11, lines 15-19) and to send acknowledgement message back to the source node (col.1, lines 15-19). One of ordinary skill in the art would have recognized that it would have been obvious to send a plurality of status query message to a plurality of destination nodes according to Judd's teaching of sending messages to different nodes. Because Applicants have failed to challenge any of the Examiner's "Official Notices" stated in the previous office action in a proper and reasonable manner, but rather the motivation in combining the reference with the "Official Notice" taken, they are now considered as admitted prior art. See MPEP 2144.03

Conclusion

34. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Darby, Jr. et al., US 6,867,708.

35. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenny Lin whose telephone number is (571) 272-3968. The examiner can normally be reached on 8 AM to 5 PM Tue.-Fri. and every other Monday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ksl
April 7, 2005


JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100